DOCUMENT RESUME

ED 056 517 EM 009 375

AUTHOR	Rheinish, Robert K.
TITLE	A Study of the Development of Childrens' Perceptions of Selected Filmic Conventions.
INSTITUTION	Indiana Univ., Bloomington. School of Education.
PUB DATE	Sep 71
NOTE	84p.; Thesis submitted to the School of Education of Indiana University
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Age Differences; *Film Study; *Perception; *Perceptual Development; *Visual Perception

ABSTRACT

A study investigated how children between ages 5 and 11 perceive three types of film transition. A second purpose was to determine if there was an emergent recognition pattern among these three types of film transition devices: image magnification on a cut (a camera transition), lap dissolve (an optical transition), and clean exit (a subject transition). The research was conducted with 15 subjects from each of four age groups--5, 7, 9, and 11. Each child viewed three examples of each type of transition. Then he was asked to describe what he perceived as having happened relevant to that transition. Judges evaluated whether the child had perceived the intended meaning in each transition. Analysis of the data indicated that children perceive these transitions with increasing accuracy as they grow older. Also, they most frequently can identify examples of clean exit. They identify examples of the other types of transition far less frequently. (JK)

ED056517

A STUDY OF THE DEVELOPMENT OF CHILDRENS' PERCEPTIONS OF SELECTED FILMIC CONVENTIONS

BY

ROBERT K. RHEINISH

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Submitted in partial fulfillment of the requirements
for the Doctor of Education degree
in the School of Education
Indiana University
September 1971

EM 009 375

ACCEPTANCE

Accepted by the faculty of the School of Education, Indiana University, in partial fulfillment of the requirements for the Doctor of Education degree.

Chairman of Committee

August 9, 1971

ACKNOWLEDGMENTS

The investigator wishes to thank Dr. D. Pett and Dr. M. Fleming who proposed and received funding for the E.P.D.A. Fellowship, of which the writer is a Fellow, and without which assistance I and my family would be much thinner and less well adjusted, and for their friendship and guidance; Mr. Harvey Frye and Dr. W. Pilder for helpful suggestions in connection with this study, but much more for interest, enthusiasm and helpfulness in general and not associated with this work and Mr. D. Rich of the Indiana University Film Library for kind assistance in the selection and acquisition of appropriate film clips. In addition, I thank profoundly Mrs. Leatha Brittain, Mrs. Pat Ulrick and Mrs. Sue Rasmussen for extensive transcription and typing chores; Philip Terman, Gary Simmons and Lynn Turner for hours of not too exciting reading in the evaluation of the Subjects' responses; the Subjects for their responses and perhaps their unpredictability; the Ted Braffet family for the use of their apartment, soon, perhaps, to be called the Braffet Perceptual and Cognitive Laboratory, and lastly my wife Dorothy and sons, Scott and Jody, who assumed the role of printer's devils and ran a temporary high-speed messenger service with considerable style and grace.

R.K.R.

TABLE OF CONTENTS

Chapter		Page
I.	INTRODUCTION	1
II.	RELATED RESEARCH	6
	Developmental Sequence of Symbolic Perception and Cognition in Children	7
	Film Literacy as a Theoretical Base	12
	Effects of Slickness and Optical Effects on Learning	32
III.	PROBLEM, METHODOLOGY AND HYPOTHESES	40
	Problem Statement	40
	Methodology	43
	Hypotheses	50
IV.	RESULTS AND DISCUSSION	51
V.	SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	60
	Summary	60
	Conclusions	62
	Recommendations	62
	BIBLIOGRAPHY	64
	APPENDIX	68
	Appendix A: Description of Film Segments	69
	Appendix B: Instructions to Judges	75
	Appendix C: Subject's Responses	78
	Appendix D: Judges' Evaluation Tables and Ordered Data	261

LIST OF TABLES

Table		Page
1.	Analysis of Variance Data	51
2.	Cell Totals	52
3.	Cell Means	53
4.	Evaluation Table, Judge 1	262
5.	Evaluation Table, Judge 1	263
6.	Evaluation Table, Judge 1	264
7.	Evaluation Table, Judge 2	265
8.	Evaluation Table, Judge 2	266
9.	Evaluation Table, Judge 2	267
10.	Evaluation Table, Judge 3	268
11.	Evaluation Table, Judge 3	269
12.	Evaluation Table, Judge 3	270
13.	Ordered Evaluation Table, Age 5, Judge 1	271
14.	Ordered Evaluation Table, Age 7, Judge 1	272
15.	Ordered Evaluation Table, Age 9, Judge 1	273
16.	Ordered Evaluation Table, Age 11, Judge 1	274
17.	Ordered Evaluation Table, Age 5, Judge 2	275
18.	Ordered Evaluation Table, Age 7, Judge 2	276
19.	Ordered Evaluation Table, Age 9, Judge 2	277
20.	Ordered Evaluation Table, Age 11, Judge 2	278
21.	Ordered Evaluation Table, Age 5, Judge 3	279

LIST OF TABLES

Table		Page
22.	Ordered Evaluation Table, Age 7, Judge 3	280
23.	Ordered Evaluation Table, Age 9, Judge 3	281
24.	Ordered Evaluation Table, Age 11, Judge 3	282
25.	Totals by Judge, Age and Transition	283

LIST OF FIGURES

Figure — Page

1. Transitional Filmic Conventions Tested 42
2. Individual Scorecard 47
3. Experimental Design 49

CHAPTER I

INTRODUCTION

Society evolves and acculturates through the development of its means of communication. In turn its means of communication are composed of significant symbols, and these significations assume, by convention, the values the society has assigned to them. Thus, a high voltage vacuum power tube commonly found in a radar set is assigned the name klystron by agreement among engineers concerned with its invention or utilization. This generic name, derived from the Greek, then becomes a significant symbol, and is recognized by its spoken or written name, or by its general qualifying characteristics by those who have an interest in such things.

The extension and development of significant symbols has a second dimension, namely that of syntax, i.e., the arrangement of symbols in time or space. Together, significant symbols (or vocabulary), and syntax (or grammar), form the two basic elements of language. Communication can take place if, and only if, there is general agreement about significant symbols and syntax between the communicator and the receiver (19:53). The breadth and depth of facility in communication is thus dependent on the breadth and depth of understanding of significant symbols, and of possible syntactical configurations in both communicator and receiver. This facility with language is termed literacy, and was coined as a print concept, but in addition to its relationship to print it has equally as strong implications for the visual mode of communication. That mode

*Numbers in parenthesis refer to numbered references in the bibliography; those after the colon are page numbers.

qualifies as a language since it possesses significant symbols and syntax.

The invention of moveable type in the mid-fifteenth century was slightly pre-dated by the discovery of ways to print pictures and diagrams. The capacity to replicate pictures and pictorial statements has had incalculable effects upon knowledge and thought. This capacity should in no way be less celebrated than the invention of the printing press. We often think without words, that is, in imagistic ways. To translate that fleeting, transitory montage of mental images which is creative thought into words would be so creepingly laborious as to bankrupt the process (15:119). In addition, each art has its own medium and each is inadequately translatable into another tongue. Though superior practical importance has been attached to speech because of its heavy application in daily life, the popular impression that architecture, sculpture, painting and music can be translated into words with little loss is fallacious (15:119).

From the thesis that visuals are a language, that they are infinitely more varied than spoken and written language with all its permutations, and that they are the stuff and substance of creative thought, a conclusion may be drawn. That conclusion is that just as breadth of vocabulary and facility with syntactical possibilities is an index of literacy level, also, a breadth of knowledge of significant visual symbols and their syntactical arrangement is an index of visual literacy. Out of the entire range of visual literacy, which is still seeking its own parameters for definition, I am concerned with film literacy and within that, specifically,

with one of the syntactical elements of film, namely selected filmic conventions. It is my purpose to determine how children, at the ages of 5, 7, 9 and 11, perceive and interpret these selected filmic transitions.

To use one of McLuhan's aphorisms, the reel world is the real world. For many children exposed to film on television or in theatres, much of life is a vicarious adventure of rapidly changing images, of three dimensional persons and places viewed in a two dimensional way. Within these media primarily, and other means of communication secondarily, children learn to identify objects, and persons, and events. These media communicate symbolically, and actually, the values of our culture. Unfortunately, these values have been interpreted for them by those who perform the gatekeeper function, with the heavy hand of commercialism always present. The viewers are expected to view in an uncritical way, to be passive acceptors of the word, but since moving pictures are the primary art form for most Americans, there is a need for viewing in a critical way. How one understands what he sees determines the degree to which he adopts it into his own cognitive framework, i.e., what is meaningful to him is subsumed under some mental category as like or unlike something he understands, or the image is indecipherable to him, and is thus ignored. Learning from the visual involves learning by association, starting with the recognition of significant cues in the pictorial representation of the item with which he is already familiar. Film illiteracy, if such a condition exists in the United States, would consist of being unable to recognize familiar objects, people, places, and action when they are shown directly and uncontrived on the screen. Such elements

would be as uncomprehensible to the film illiterate as the written word is to the illiterate; a code with no way of cracking it. Continuing up the ladder of film literacy are other rungs at which parts of a picture are identified but no sense is made of a whole action, where picture and reality are confused, where film conventions are misunderstood and are viewed disinterestedly because of it. Above these levels are developed the capacity to interpret sophisticated symbolic visuals, obscure montages, dream sequences and unusual transitional effects and devices. (6:271)

Given that there is value in developing film literacy and appreciation in a media dominated world, it is necessary to find out where young persons are before we can determine how they may best proceed up the ladder of visual literacy. It is assumed that the subjects by the age of five will be able to identify film showing familiar objects, be able to assemble familiar movements into meaningful actions and no longer confuse picture with reality. The hypotheses (stated formally elsewhere) is that, as children get older they recognize the intended meaning of specific conventional filmic transitions and furthermore, that there is a hierarchical pattern in the frequency of recognition of these filmic transitions. If the hypotheses are correct, further investigation into more obscure transitions and the increasingly common contravention of filmic conventions would be indicated. If the null hypotheses are correct, instruction in the meaning of filmic conventions would be indicated if viewers, of the subjects' ages and background, are to understand film at any level above the most shallow and obvious.

Within this, however, the optical filmic conventions, if unrecognized, might well be omitted from simpler films produced at the local level such as the single concept 8 millimeter type. Commercial films for screen and television might also omit these transitions, relying primarily on straight cuts to indicate changes in time or place and allowing the audience to assume such changes from the contextual elements of the film. Correct interpretation of the other transitions tested however, are sine qua non for basic understanding of the medium.

CHAPTER II

RELATED RESEARCH

Developmental sequence of symbolic perception and cognition in children.

This segment describes how children perceive and associate symbolic elements according to Piaget's theory of child development. Film literacy as a theoretical base, describes its place within the developmental pattern of visual literacy, its values and its implications for learning. Included are studies concerning how film transitions are perceived among primitive peoples.

Effects of slickness and optical effects on learning, describes the related studies by Neu (Penn. State: 1950), "The Effect of Attention Gaining Devices on Film-Mediated Learning," and by Mercer (Penn. State: 1952), "The Relationship of Optical Effect and Film Literacy to Learning from Instructional Films."

Developmental Sequence of Symbolic Perception and Cognition in Children

Piaget

Piaget, the French psychologist, likens Sensorimotor intelligence (Sensorimotor Period 0-2 years) to a motion picture being taken and projected very slowly so that "all the pictures are seen in succession, ...without the continuous vision necessary for understanding the whole." (13:55)

Whereas the Sensorimotor child is limited to linking successive perceptions of concrete objects and events through very brief anticipations of the future and memories of the past, the Preoperational child (2-7 years) has access to a comprehensive representation of reality that can include past, present, and future and can occur in an exceedingly short period of time. (13:55)

The result of this extension in scope, and of a shift of interest from action to explanation, is the development of a system of codified symbols that can be manipulated and communicated to others. Instead of interacting directly with the environment the child can now manipulate symbols that represent the environment. (13:54)

This system of codified symbols is first primarily heard input, then spoken output, then visual input, and is developmental in nature. In each of these actions or reactions, the child drops out random and ineffective elements and is reinforced for purposive initiation or response. In other words, he receives and transmits symbolically more effectively. Extending his means of communication through the development of a digital

code he learns to write, continues extending his vocabulary, learns syntactical language conventions and manipulates digitals to express experiences, real or imagined, to others. He operates with iconic symbols in somewhat the same way except that he is much less frequently the producer of pictures than he is the receiver of information from pictures.

Syntax, vocabulary and punctuation are elements in written language. It is not unreasonable to assess their parallels in film as sequence, scene and transition and to accept film as a language to be acquired as the spoken or written language is acquired. My question here deals with specific elements of the filmic symbolic code and what understanding children of various ages have of it.

The age groups of the children from which my subjects will be drawn are those in Piaget's Period of Concrete Operations (2-11 years). Within this period are two subperiods, namely the Preoperational Subperiod (2-7 years) and the Concrete Operations Subperiod (7-11 years). Within each of these subperiods Piaget has observed certain activities, certain ways of responding, and certain ways of perceiving that may be generalizable across children within these age groups. These observations and conclusions allow me to make certain predictions about how children will recognize the filmic transitional elements to be tested. For example, in the observation and evaluation of the Preoperational child's conception of velocity, if a child observes the movement of an object through points A, B, C, and D, he recognizes that it took more time for the object to get from A to D than from A to B, and that it passed through point C after point B. Thus, one might conclude that children conceive of temporal succession and duration as do adults. However, when two objects are moved

simultaneously but at different velocities, though starting and stopping at the same time, the subject will relate the distance of travel to the time, i.e., he will not accept that their time of travel was the same since one object went further. (13:87) Thus, transitional elements representing time changes, such as dissolves, would probably be perceived by the Preoperational child as real time as opposed to cinema time. Conversely, the child in the Concrete Operations Subperiod would probably recognize such a time lapse as being shorter in duration than the period it was meant to represent. The Preoperational child, failing to recognize a symbolic time lapse, would explain completed actions as having occurred in the actual time of the film dissolve, regardless of how preposterous such an explanation might be.

One of the differences between the adult and the Preoperational child is the tendency to focus on the successive states of a display rather than on the transformations that occur between the two conditions. When the task is to depict (by actual drawings or multiple choice selection) the successive movements of a bar pushed over from a vertical to a horizontal position, the child--fails to indicate the intermediate positions of the bar. (13:64) Thus, Preoperational children cannot integrate a series of states or conditions into a whole. In a like manner, one might predict that Preoperational children view films in discrete segments and not as an integrated sequence, i.e., they do not close the unexplained gaps in film sequences as adults learn to do. These children may not be able to recognize

that the increase in the size of an object or person on a cut has a causative element, i.e., decrease in relative subject to camera distance, but may rather perceive such change as an entirely new sequence not related to the last, even though the subject is the same.

Another element of Piaget's observations which makes a prediction possible is that of "object constancy," which is part of the process known as "Assimilation," i.e., the notion that the "precise pattern of cortical activity initiated by an incoming stimulus is a function not only of the pattern of that stimulus, but also of what is already going on in the brain." Object constancy indicates that our perception of objects remains the same even though changes in distance, size, shape, brightness, angle of view and color occur. Objects are invested with meaning in such categories as beauty, ugliness or threat. The input is changed to fit the existing mediating process. The reverse of this procedure is called "Accommodation" by Piaget and indicates the change in the mediating process by the stimulus event, the input. (13:8)

It is reasonable to assume that exposure to television allows the youngest children in the group to be tested (5 years of age) to have had sufficient exposure to common objects and persons on television and, as shown in the film clips, to recognize them even if distance, angle and view, relative size, etc., are changed. Such is not the case with certain foreign audiences not exposed to film such as those John Humphrey encountered in Iran. (6:269) While such adults would have no difficulty with "object constancy" while encountering three dimensional

objects, two dimensional representation of three dimensional objects (film, pictures, photographs, etc.,) is often another matter for those not so exposed.

Lastly, we may consider the concept of "object permanence." This developmental concept is the beginning of a conception of general space, and infers that an object has a permanence beyond the child's immediate perception of it. For example, prior to Stage Three (4-8 months) of the Sensorimotor Period, the child begins to cry when his mother leaves the room. In his conception she has ceased to exist merely because she is no longer visible to him. Prior to this Stage the child would merely shift his attention to another object or person if the element of his concern were removed from his visual field. Now he searches for that which has been absented from view. (13:24)

In the case of objects or persons being removed from view, as in a clean exit (See p. 43), it is probably the case that children in the age groups to be tested will recognize that they continue to exist even though they are no longer visible. Beyond this, whether children can suggest some unseen action that resolves the incompletely observed situation is the moot point. One might predict that subjects can do this with a high degree of success.

The observations of Humphrey and Wilson with Iranian and African audiences, as will be described more fully in section two, suggest that a clean exit to those audiences is not an entirely satisfactory transitional device. In the examples described, the local audiences, while they probably

recognized that the subject continued to exist after he or it left the frame, did not fully understand unless the camera followed the subject until he or it went beyond a natural barrier and was no longer visible. (6:269)

Film Literacy as a Theoretical Base

In his article "Sequence in Visual Communication," Sol Worth notes that in the early days of movies the dramatic scene was thought of as the basic film unit. This concept was drawn from the theatre. The limitations of the scenic unit were thus how much film could be held in the camera and how long the scene would take. The next step after single scenes was, again following the theatre, a number of single behavior units spliced together (20:130).

In 1902, Porter found that isolated "bits" of behavior could be interspersed in the unbroken sequence of action without any loss of understanding. Most film makers of the period felt that viewers could not know what was on the screen without seeing the entire unbroken scene. (20:130)

In 1923, Serge Eisenstein defined the basic unit of film as the shot. He proposed that thesis plus antithesis derives sythesis, i.e., idea plus idea in juxtaposition equals a new idea. (20:131)

Pudovkin, in 1927, suggested "parallel structure," "contrast," "similarity" and "recurrence of theme" as filmic elements, and in 1960 Kracauer defined structural units and described film as an art "composed of moving, transcending, and verbally inexpressible entities." (20:131)

This has led us to Spottiswoode, Hodgkinson etc., who have talked in terms of film language but without developing a cohesive body of requirements governing syntax and grammar. New hypotheses concerning film as the language of communication have been put forth. Such proposals do not find it necessary to define film as a language following linguistic requirements. Rather other definitions and parameters have been evolved (20:132)

Film language then, consists of "a set of rules describing the interaction of specified elements, the operations of these elements, and the cognitive representations of them, in sequence." (20:133)

Worth defines five parameters: "image in motion" over time in space with sequence--including as an overlay a matrix of sound, color, smell, taste, and other as yet unknown technological or sensory stimuli." (20:133)

The videme is the generic name for the "photographic image event that can be seen and that is accepted by viewers as something that represents the world." (20:133)

"The cademe, or camera shot is a continuous strip of film depicting a continuous photographic image event, i.e., that film segment coming between depression and release of the camera trigger." (20:134)

The edeme, or editing shot is that resultant segment of the cademe left when segments not to be used are cut out. (20:134)

"Motion and space are parameters along which this basic element--the videme--may vary." (20:134)

"Motion is a parameter that can be measured both internally, within

the element, and externally, imposed upon the element." Camera movements are examples of external movement; movements of subjects within the videme are internal movements. (20:135)

"Space is a parameter referring to the size and position of objects in relation to the spatial bounds of the screen." (20:135)

Time, is a "parameter related to the videme in motion and space and to the sequence of edemes." It is "internal and real when it is a function of the videme and external and apparent when it is a function of the sequence." (20:136)

Sequence enables external time to be apparent. In other words the sequencing of edemes lends itself to manipulation such that the time we infer from screen action bears little relation to actual elapsed time. (20:136)

Worth considers the four parameters--image, space, motion, and time--to be "the study of the semantics of the language," and sequence to be thought of as related to the syntactic content of the language. (20:137)

One interesting experiment Worth conducted concerns the showing of filmed geometric shapes (big centered triangle; big centered circle; small, cornered triangle; and small, cornered circle) in various orders and connected by cuts, fade-out, fade-in and dissolves. A seven-point semantic differential scale developed an evaluation among the subjects that "dissolves are more amorphous, more interesting and more sensitive than cuts." Thus, the experiment "tends to confirm the psychological reality of the elements and operations defined, and it also tends to confirm specific predictions

about the effects of particular operations on particular types of elements, thus lending some support to the present approach to film language." (20:143)

A study by Worth and Adair among the Navajo indicated that it is possible to teach people of other cultures to use film elements to communicate and that members of different cultures tend to use rules when combining videmes that "seem to be consistent across the culture and consistent with linguistic and other cultural rules. (20:144)

> In summary, "an understanding of film language is essential to understanding the image event; the image event is central in a communication process that moves from the feeling concern of the film maker to the story organism he chooses, through the image event, perceived in turn by the viewer and translated first into the perceived story organism and then into the perceived feeling concern; this communication process is the heart of visual communication." (20:144)

Pryluck, in his study "Structural Analysis of Motion Pictures as a Symbol System," distinguishes between two classes of information. First is digital information that includes words and numbers. These are usually socially agreed upon and arbitrary and are manipulable according to fixed rules. Digitals are discrete and serial and are rarely presented simultaneously. Secondly,is information termed analogic which is everything else and is characterized by being continuous and simultaneous. (14:380)

In addition, we encode what we attend to, which is, of course, only a fraction of that which is in our environment. According to Pryluck, Bruner (1964) has reminded us that "man advanced by utilization of systems of implementation which enlarged our capacities to deal with the

environment." (14:381) A car extends our means of locomotion, a typewriter extends our capacity to communicate, and similarly, "systems of implementation that enlarge our capacity to communicate and to conceptually manipulate the environment extend our reach, or change the way in which we may reach." (14:381) Film is another way by which we may conceptually manipulate our environment, or perceive our environment conceptually manipulated.

Pryluck describes primary coding in the symbol system, which film is, as the shot, i.e., the picture. It differs from the word which can have many meanings to many people in that the shot has but one meaning, i.e., that which is pictured. This meaning is also defined by photographic elements such as angle of view, size, placement in the frame, lighting, perspective, etc. (14:385) In addition, length of the shot, as it is taken and as it is edited, caused Worth in his paper "Cognitive Aspects of Sequence in Visual Communication" (previously noted) to define the former as the "cademe" (See p. 13) and the latter as the "edeme" (as edited). (14:386) Secondary coding then consists of the mechanical processing of the encoded cademe, using the coding variables available. Placement, sequence, duration, pace, tempo, and the use of optical transitions are all the editing elements which are the foundation of film art. (14:387)

Pryluck feels that opticals (fades, dissolves, wipes, etc.) are not the equivalent of punctuation or any other grammatical characteristic and cites Mercer's study as evidence of their failure in this regard.

(14:390) However, Mercer does indicate that while the audience does not attach a specific interpretation to various opticals, film producers tend to do so though there is considerable variability among responses. (10:3)

In essence, picture as it is manipulated and edited, and sound, music and word, as they are juxtaposed with picture, combine to have new meanings quite different from that meaning they have separately. Together they constrain and facilitate the communication of the intended message in some intended way. (14:400)

Salomon and Snow in their article are less unequivocal in their evaluation of film attributes. (16:234) They consider, in evaluating visuals as a language, that while language must have conventions this is less true of film. In fact, the violation of syntactic rules, if these exist at all, in their estimation, may often be desirable. Each producer can impose his own structure on his art, however, when the information becomes crucial then the most conventional structure or syntax must be used. If the information is more comprehensive, then the syntax may become more involved, however, a baseline is common to the producer. (16:235) The film medium has, over an extended period, yielded a common core of syntax and grammar. Films usually have a theme within which are understandable sequences from which an audience shares some generalized semantic meaning. (16:235)

To the degree this common core of syntactical attributes is violated, it is reasonable to assume that more of the message is lost for more of the audience. The message can become lost in a swirl of flashbacks within flashbacks, of dream sequences, of optical effects. Thus the greater

the abstraction from reality, the greater the need of higher visual literacy level on the part of the audience. Perhaps the abstraction in film is analogous to that in art, in that, the more abstracted from reality a painting becomes, the fewer the viewers to whom it communicates.

It is interesting to note that Salomon and Snow hypothesize that the complex experimental film may be analogous to psycholinguistic experiments that indicate that subjects usually try to straighten out ambiguity and that, once they realize there is something unexpected or incongruous before them, they tend to devote more attention to it and the information which cannot be immediately unscrambled is placed in storage for later attending. (16:237) Thus, the viewer may well suffer from a media overload, i.e., loss of the Gestalt of the communication by attending exclusively to unresolvable elements, given a specific level of aesthetic sophistication.

Sergei Eisenstein, the Soviet film maker, had at least as soon as the early 1920s come to some conclusions about cinematography and film language. For him, the first element of screen language was the photo-fragment. Thus, the montage (5:3). Montage is not merely a means of producing effects, but a "means of speaking, a means of communicating ideas, of communicating them by way of special film language, by way of a special form of film-speech." (5:245)

Eisenstein's quote on language, from the writings of Fritz Mauthner, seems to capture the former's feeling for the power of film montage.

> "Every metaphor is witty. A peoples' language, as it is spoken today, is the sum of a million witticisms, is a collection of the points of a million anecdotes whose stories have been lost. In this connection one must realize the people of the language creating period as being even wittier than those present-day wags who live by their wits. . . . Wit makes use of distant similes. Close similes were captured immediately into concepts or words. A change in meaning consists in the conquest of these words, in the metaphorical or witty extension of the concept to distant similes. . . ." (5:246)

Thus, the imaginative film maker has at his disposal an army of visual images to be manipulated and juxtaposed, to be placed in contrast, in collusion and in conflict at his own discretion. His army of visual images is probably no less powerful than the poet's army of verbal ones.

Eisenstein rejects Pudovkin's evaluation of the montage as an assembly of shots. He rejects linkage for collision and conflict; conflict of scales, of graphic directions, of volumes and masses and depths, of close shots and long shots, and of pieces of darkness and pieces of light, and of conflicts between an object and its pictured dimension (as with a distorted wide-angle lens) and between an event and its duration (as with real time and cinema time). (5:39)

Eisenstein seeks a unified system for methods of filmic expressiveness. (5:39) It is interesting to note that for several years now that system, developed and adhered to with little flexibility for so long, is now contravened with great regularity. Many film makers now honor filmic conventions more in the breach than in the practice. Of course, considering Mercer's experimental results that showed his audience unable to interpret fade out-fade in, dissolve, wipe and cut with any consistancy, it is

reasonable to use the transitions that contribute to the producer's purpose, i.e., smoothness, tempo, attention-gaining, etc., and to, as Mercer recommends, make full use of cues other than optical effects if transitions are to be well understood. (10:16)

Concerning another element of film literacy, Eisenstein recalls D. W. Griffith's proposal to his employees that he use parallel "cut-back" in his 1908 production After Many Years. A scene of the heroine awaiting her husband's return was to be followed by a scene of the husband cast away on a desert island. Griffith's wife asked him how he could tell a story jumping about like that and was convinced the viewer would be confused.

"Well," said Griffith, "doesn't Dickens write that way?"

"Yes, but that's Dickens; that's novel writing' that's different."

"Oh, not so much, these are picture stories; not so different." (5:201)

Fortunately audience perception has grown with film techniques. The familiar spoken transition on radio "meanwhile, back at the ranch," initially had a filmic counterpart, usually the fade out-fade in, which often gave way to the lap dissolve and then to the cut in television where a slowed pace may lose viewers.

It is interesting to speculate on how an audience only partially film literate might perceive the segment of the film October, Eisenstein describes.

> "In October we cut shots of harps and balalaikas into a scene of Mensheviks addressing the Second Congress of Soviets. And these harps were shown not as harps, but as an imagist of the mellifluent speech of the Menshevik opportunism at the Congress. The balalaikas were not shown as balalaikas, but as an image of the tiresome strumming of these empty speeches in the face of the gathering storm of Historical events. And placing side by side the Menshevik and the harp, the Menshevik and the Balalaika, we were extending the frame of parallel montage into a new quality, into a new realm: from the sphere of action into the sphere of significance." (5:245) (emphasis in the original)

There is ample evidence that the satirical elements in the October segment described would be lost on those not frequently exposed to two dimensional representations of reality. Chu and Schramm propose that "illiterate people need to learn certain pictorial conventions" (4:75) and they reject the assumption that if people cannot understand the words they surely will understand the pictures. Indeed, there are difficulties with the assumption. When Peruvian villagers were shown enlarged pictures of lice (Holmberg, 1960), they were unable to recognize them or to see any connection between the film and their own life. The unrealistic was not understood. (4:76)

In Nigeria, Court (1959) found audiences accepting the largest object in the picture, rather than that in the foreground, as being most important. In addition, the whole object had to be shown. A shot of a goat's head was taken to be that of an old man because the goat had a beard and his four legs were below the frame. Furthermore, the perception of pictures was distorted by the cultural experience of the viewers. Since North Nigerian buildings are not rectangular, viewers could not

recognize the vertical lines and right angles of house interiors. (4:75)

In Kenya, Holmes (1960) found perspective was only seen by his subjects when the same type of objects followed each other. Perspective was lost with different objects at varied distances. Objects larger than life were not recognized though those shown smaller than life were. (4:76)

In 1960, Fonseca and Kearl found, in rural Brazil, that pictorial symbols that were highly or insufficiently detailed, or imaginatively treated, or of unfamiliar subject matter, were not understood. This was also the case when single pictures for a process requiring several steps were shown. (4:76)

Chu and Schramm suggest that the visually semi-literate must be taught to read pictures just as they are taught to read printed material. In addition, certain cues and symbols may have meanings for the viewer quite different than those intended. Unfamiliar themes, trick angles or partial objects should be avoided (Saunders, 1953); pictorial symbols should be realistic and a process should have as many pictures as there are stages in the process. (Holmes, 1963) (4:77)

Morton-Williams in his book, Cinema in Rural Nigeria, proposes that a film is a means of symbolic representation, and that an audience derives the meanings that they give to the actions projected on the screen from the cultural expression of their own social processes. (11:38)

Peoples of different cultures have different ways of conceptualizing experience and "... their (European) ideas of space and time, which, after Kant, had been supposed transcendental forms of intuition framing all

consciousness, were at least partly given by the structure of the Indo-European languages." (11:7)

"The complexity of social organization, the degree of division of labour and the richness of material culture of any people influences and limits the range of their understanding of these films, but other factors also operate, so that the response reflects their world picture and the values of their culture." (11:36)

In the film, "Take Time -- Take Time," the Ibo audience did not perceive the use of a story, told by an old man to two children, as a continuity thread, but regarded them in isolation and therefore as irrelevant (11:36)

In the film, "Mosquito," a mosquito magnified immensely was understood and accepted (11:36).

In "Good Business," there were "many exclamations at the aerial view of the railway siding; a few perceived, many were puzzled and saw better the succeeding shots." (11:114)

In "Daybreak in Udi," the time dissolve showing an unroofed building suddenly completely finished led some female viewers to exclaim that it was built quickly. (11:122)

In "The Beadmakers of Ilorin," a close-up of feet holding a bead for drilling, was not perceived. (11:138)

"Nigerian Cinemagazine No. 2" showed pupils performing some farm work, which dissolved to a formal assembly of the same children, neatly dressed. Viewers exclaimed about the speed of the change, confusing real time with cinema or apparent time. (11:159)

Morton-Williams finds that, in general, the means by which transitions are accomplished from shot to shot do not seem important to the rural Nigerian audience's understanding.

> "Mixes, fades, cuts, are all acceptable, provided that shot succeeds shot in the order dictated by the logic of the events in the action. Within this condition, audiences were not baffled by rapid changes of scene that took them over long distances or that compressed time; although members of audiences did form the most varied impressions of the time which elapsed between successive sequence, as the descriptions of reactions and the children's essays record."
>
> "In general, all the apparatus of the cinema was taken for granted, and there was little curiosity to know how films were made...." (11:45)

He also observes that, "audiences rapidly accustom themselves to this medium of communication, and on the whole comprehend and remember a satisfactorily high proportion of what is presented." (11:46)

Thus, through observation, Morton-Williams has defined the position on the visual literacy ladder where rural Nigerians presently find themselves. The lowest rungs of that ladder, as previously noted, may be occupied by some primitives such as the Jivaros of the Matto Grasso of Brazil. There, some years ago, according to newspaper and magazine reports, missionaries dropped photographs of themselves from an airplane some days before parachuting into the jungle to make contact. The Jivaros were perhaps unable to separate figure from ground in the photos and slew the missionaries on sight because they may have failed to recognize them. Many primitive peoples are unable to identify two-dimensional pictures with the originals since they have not evolved a two-dimensional representational art, as Morton-Williams makes clear in his introduction.

Lord Keynes observed, "civilization is a thin and precarious crust erected by the personality and the will of a very few and only maintained by rules and conventions skillfully put across and quite fully preserved." (11:47)

Joan and Louis Forsdale, in their article "Film Literacy" have devised a hierarchical sequence of film literacy levels. This extends upward from the "total illiterate" who cannot recognize familiar objects, people, places and action when they are shown on the screen. (6:264)

An example of the "total illiterate" was demonstrated on a W.T.I.U. (Channel 30, Bloomington) film program in February, in which some New Guinean natives were each shown a color polaroid picture of themselves. Each was unable to discriminate between figure and ground. The photographer had to point out, in turn, salient features on the native's face and then the corresponding element in the picture e.g., nose, ears, hair, eyes, etc. A puzzled look turned to one of delight, and with an excited howl, the native, grasping the picture, leaped to his neighbor's side and showed it to him. The, as yet, uninitiated native gazed at the picture in uncomprehending bewilderment until the process was repeated. Each native upon having a photograph unscrambled for him was then unable to return to his former unperceiving state.

Of the two ways of codifying information suggested by Ruesch and Kees (1956) analogic and digital, both require specific learning. The Forsdales suggest the map is the most common analogic device. It is obviously not the country it represents. It is two dimensional, smaller than full size, and drawn on a conventionalized scale; Mercator, conical, polyconic, etc. (6:264). A picture, in the same way, is not what it

represents, but is analagous to it.

> Picasso showed an American soldier through his villa one day. . . . The young man felt impelled to confess he didn't dig Picasso's wierd way of painting, because nothing on the canvas looked the way it <u>really</u> is. Picasso turned the conversation to more acceptable matters by asking the soldier if he had a girl back in the States. The boy proudly pulled out a wallet photograph. As Picasso handed it back, he said, "She's an attractive girl, but isn't she awfully small?" (6:265)

Technologically primitive cultures are ordered on five levels by the Forsdales.

Level one: Total non-comprehension. The viewers do not recognize clear simple motion pictures of familiar objects.

John Humphrey 1961, an American educational film maker with considerable overseas experience, commenting on experiences in Iran in the 1950's: We did a film on nutrition. . . . In part of the film we had the classroom with the professor up front, with charts, diagrams, pictures of the various vegetables and so forth. It was <u>completely</u> lost on the audience (emphasis in original). They didn't understand that this was a carrot; . . . that this was a cabbage; . . . that this was a potato. (6:267)

Level Two: They identify parts of a film but make no sense of a whole action portrayed in the film.

John Wilson (1961) a British educator with extensive experience in West Africa.

> . . . There was very slow movement of a sanitary laborer coming along and seeing a tin with water in it. . . and picking the tin up and very carefully pouring the water out and then rubbing it into the ground so no mosquito could breed and very carefully putting this tin in a basket on the back of a donkey. . . . All this was done very carefully to show how important it was to pick up those things because of mosquitoes breeding in standing water. . . These would have been familiar enough scenes. The film was about five minutes long . . . . We showed this film to an audience and

asked what they had seen. . . . They said they had seen a chicken! . . .and we didn't know there was fowl in it! So we very carefully scanned the frames one by one, for this fowl, and, sure enough, for about a second, a fowl went over the corner of the frame. . . when we questioned them further they had seen a man, but . . . they hadn't made a whole story out of it, and in point of fact. . . they hadn't seen a whole frame--they had inspected the frame for details. (6:268)

Level Three: The audience confuses picture and reality.

John Humphrey (1961):

. . . we did a series of films on Iran trying to explain the Iranian people to themselves--helping them to understand that they were not just a member of their tribe but actually a member of a country too. The Shah himself introduced these films. We [heard] . . . constantly . . . such remarks as: "See, isn't the Shah great; he can put himself into that little box and come visit us."

Richard Griffith (1953), on Robert Flaherty who is showing a portion of the Eskimo film, "Nanook of the North" to Nanook's friends:

There is something in the background. The something moves. It lifts its head.

"Ivuik! Ivuik!" [walrus] shakes the room. The figure [Nanook] stands up, harpoon poised in hand.

"Be sure of your harpoon! Be sure of your harpoon!" the audience cries.

The figure strikes down, the walrus rolls off into the sea. More figures rush in; they grab the harpoon line. For dear life they hold on.

"Hold him! Hold him!" shout the men. "Hold him! Hold him!" squeal the women. "Hold him! Hold him!" pipe the children.

The walrus's mate dives in, and by locking tusks attempts rescue.

"hold him!" gasps the crowd.

Nanook and his crew, although their arms seem to be breaking, hold on. But slowly and surely the threshing walrus drags the figures nearer the sea.

"Hold him! Hold him!" they despair. They are breathing hard. "Dig in! Dig in!" they rasp, as Nanook's feet slip another inch through the sand.

Deep silence. Suddenly the line sags, the crew, like a flash, draw in the slack, and inch by inch the walrus is pulled in to shore. Bedlam rocks the house. (6:269)

Level Four: No understanding of the simplest film conventions.

John Humphrey (1961):

. . . if we showed a closeup of an animal, fly, or an eye, the movement from long shot to closeup had to be step by step to allow them the feeling that they were actually walking up to see the object close up. If you showed a fly. . . in closeup, and it filled the screen . . . [the audience's comment is] We don't have flies that big. . . .

John Wilson (1961):

Panning shots [were] very confusing because they didn't realize what was happening. They thought the houses were moving.

John Humphrey (1961):

You lose an audience immediately once a fade goes into a film. Why? Because the screen's black and they all turn to look at the projector to see what happened to it. . . [D]issolves, fades, wipes and all the optical effects that we here in the United States more or less take as punctuation marks in a film, are not understood. They wonder what's wrong with the projector.

John Wilson (1961):

We found that the film is, as produced in the West, a very highly conventionalized piece of symbolism, although it looks very real. For instance, we found that if you were telling a story about two men to an African audience and one had finished his business and he went off the edge of the screen, they wanted to know what happened to him; they didn't accept that this was just the end of him and that he was of no more interest to the story. . . . We had to follow him along the street until he took a natural turn. . . . it was quite understandable that he could disappear around the turn. The action had to follow a natural course of events. . . .

John Humphrey (1961):

Here in the U.S. . . . We can have somebody . . . walk out the door and pick him up in another shot at Times Square . . . . We all know what happened. . . . In Iran this is not true. You had to take him out of the building, walk him down the street, have him some way or another get to Times Square. . . . We [often] could not afford the footage that was necessary to take a man all the way, and thus assure the fullest understanding. . . . (6:269)

Level Five: Incomprehension of, or indifference to, the unfamiliar.

John Humphrey (1961):

If a peasant sees a film [about something] . . . actually within his own experience, fine. If not . . . they do not know what these pictures represent. For instance . . . pictures of Teheran--not the United States, but pictures of Teheran, some parts of which is a fairly modern city--it was incomprehensible to them. They didn't even know what it was all about. A building eight stories tall? It was beyond their experience!

Hortense Powdermaker (1962):

Many European customs were misunderstood [by Rhodesian Africans]. It has already been noted that kissing, about which many Africans appear to have learned from films, is regarded as a direct prelude to sex relations. African parents do not kiss their children. In a film, when a man kissed a child, some of the audience assumed that the man was the child's father and that the kiss was a prelude to incest, regarded with horror.

My first acquaintance with these problems of film literacy came after some ten years of schooling in Africa in problems of teaching people to read. I was aware of the fact that when you try to teach people to read something that is not related to their own culture, nothing happens. You get them reading gaily about railway stations and they've never seen a railway station. You pause and ask them to draw you a picture of a railway station and they'll reproduce something that they saw in a book, not a railway station they would find if they travelled a hundred miles further south in their own country and saw a railway station.

John Wilson (1961):

The personal concept of what a railway station is is just not there. This of course represents a very very serious difficulty. One solution is to teach them to read and talk about only the things which they can quite obviously see. But you are faced with a

problem later on--how do you move from there to wider contexts? It seemed perfectly simple to me that this wider move should be made through pictures. I began looking through well-illustrated books, searching for materials, thinking I had the key. . . .

The it dawned on me that I had perhaps made a bad mistake. I had assumed that to a primitive African a still was something simpler than a moving film. I had considered the complexity of the technique of films and imagined because the technique was complex that the impact of the finished product would be complex. . . .

My point is that I think we've got to be very wary of [both still] pictures [and films]; they can only be interpreted in the light of your experience. Now, next we thought that if we are going to use these films we've got to have some sort of process of education . . . . You've got to start in the culture you are in and then move off to other cultures by the process of association and contrast. . . . The interchangeability of films for different cultures is something you have to be careful about. . . . We developed one film for two purposes: . . . the purpose of establishing a common humanity, and of teaching a film convention. We took a film of successive shots of old men doing exactly the same things in England and in Ghana, sunning themselves on the bench in the park. Beside the well--just common situations. In another, we showed a mother carrying her baby in England, putting her baby in a pram, and a mother in Africa picking up her baby and tying it on her back--using situations from different cultures that had obvious meanings. . . . We thought this content would teach them to be less parochially minded. Parochialism is a feature of all tribal life in Africa. It was difficult for them to generalize on the basis of a single picture in a motion picture; that is, if they saw one of their own people doing something, it was difficult for them to generalize to the point of saying this can be any man. The same thing occurs with readers. . . . (6:271)

Within the moving picture there are two levels of meaning. That which is analogous to and representative of that which it purports to be and a beyond that a deeper meaning, one that is subtle and symbolic. What we are dealing with in the above examples is the basic visual literacy level which the Forsdales define. Above that is the more complex use of camera point and montage of which Eisenstein's description of a sequence of pictures is a not unreasonable exemplar.

In a short pilot study the writer recently conducted, a few children were shown some commercially produced Super 8 film cartridges. They were asked to explain what happened when a building grew bigger on a zoom, and where a man went when he walked out of the frame, and how a carving partially complete, was shown finished after a lap dissolve. Some of the answers were very astute considering the ages of the respondants, some as young as five. Some others attributed magical powers to pictures that apparently grew and offered wild proposals to explain that which they did not understand. The reactions of some very young children were, in their own way, not unlike the reactions of primitives on the lower rungs of the visual literacy ladder as related in the Forsdales' article. I suspect that children move up the ladder not unlike they become literate. The latter, of course, occurs through instruction as well as exposure while the former is undoubtedly exclusively a function of exposure.

Within film technique "naturalism" was the simplest and perhaps the least interesting. The camera was merely held in one position and ran until the event was concluded, excluding film reloading time which was often covered by another, similarly placed camera. The event, such as the funeral of Queen Victoria was sufficient to hold the early audience's attention, giving, as it did, the vantage point of a good seat in the reviewing stand. (Hagen) As previously described there is much more to film than that. A film (or video tape) that combines a string of behaviors, as it can record more behavior and more people than any other means of communication but it "lacks the explicit naming which selection more evident in other devices." (2:151) There is propaganda and falseness

inherent in it. The cameraman records selectively and the editor manipulates selectively that which is recorded, and few of the innocent viewers are aware of how they are manipulated. The demands of Congress to see out-takes from the C.B.S. documentary "The Selling of the Pentagon," is just such an example. Was the program a deliberate falsification through editing or an objective documentary? Are the out-takes evidence of fraud, or is the demand for them an attack on free speech?

The packaging of information, or misinformation, is very important when it becomes common experience in everyone's life.

S.I. Hayakawa:

> Our job as teachers is to inculcate habits of rational choice and decision. The advertising profession, however, with all the technical resources of art, expert copy, color printing, radio, and television at its command, spends most of its efforts in the encouragement of irrational and impulsive choice. . . . When home economists urge government grade-labelling to encourage rational choice, industry and the advertising profession cry, "Socialism". . . . The teacher's job is to encourage intellectual and moral self-discipline; the job of the advertiser of consumer goods is to encourage self-indulgence, even at the cost of life-long bondage to finance companies. . . . So basically the advertising profession and we in the teaching profession are at odds with each other. . . . (17:157)

An initial step in learning how we are manipulated by film comes through learning how to manipulate film; how to become creative and discriminating viewers; how to become film literate.

Effects of Silkness and Optical Effects on Learning

Two studies of particular relevance to my area of concern are that by Hsu (Penn State: 1969), "The Effect of Animation Training Devices on

Film-Mediated Learning," and that by Mercer (Penn State: 1952), "The Relationship of Optical Effect and Film Literacy to Learning from Instructional Film." Though both deal with learning from film, more immediately relevant elements, of consequence for me, were determined within these studies.

It is interesting to note, as an aside, the opinion of C. R. Carpenter in his paper "Logistics of Sound Motion Pictures for Military Training," that instructional films should involve the wedding of artistic skills and scientific principles. Yet that there is strong resistance on the part of many film producers to accepting and utilizing newly determined empirical evidence related to learning. Theatrical and technological innovations have been adopted with enthusiasm but not often newly determined principles of perception, recognition, learning, etc. (3:22) As the Mercer findings, later noted, show, a large number of film producers questioned differed in opinion over the meaning of various transitional filmic devices and so did audiences questioned on the same matter. The latter tended to depend almost exclusively on contextual clues to determine the meaning of the transition. Thus, it might be concluded that cinematic transitions are highly ambigious in and of themselves and have meaning only in context.

The next study examined techniques used by film makers to achieve emphasis and to increase teaching effectiveness. In it, he compared the use of relevant and irrelevant attention-gaining devices. An example of the former might include an extreme close up of a part of a gun when

that part is being described on the sound track. An example of the latter might include interrupting a film on a technical subject with a shot of a girl in a bathing suit. According to the author, "relevant devices" should facilitate recall, while "irrelevant devices" should distract the audience and inhibit recall. In addition to visual attention-gaining devices, the author also used audio attention-gaining devices, but these are of no concern to us here. Visual attention-gaining devices represented various categories of stimulus conditions: movement and change, size, impressiveness, sudden contrast, repetitive or prolonged contact and novelty and peculiarity. (12:5)

Films used to test the hypothesis included the following film versions on the use of machine shop measuring instruments:

1. Basic Version: No experimental attention-gaining devices.
2. Visual relevant: Attention-gaining devices related to the points of content being emphasized.
3. Visual irrelevant: Attention-gaining devices unrelated to the points of content being emphasized.

Two populations, Army recruits and Navy recruits, were each randomly divided into six comparable groups. Five were each shown one of the film versions and tested and the control group was merely tested.

In the relevant visual version, four cuts to close-ups or extreme close-ups were used and one dissolve. Twenty-six attention gaining devices in all were used in each version. (12:5)

The results indicated that, for the Army group, the basic version

was more effective than any device version,while for the Navy group, the basic version was about equal to the two relevant device versions. Interestingly, for the Army group, the visually irrelevant version was the most effective of all the versions which contained attention-gaining devices. (12:16)

In separate testing about recall of the attention-gaining devices, it was determined that irrelevant devices were best recalled, i.e, they had called attention to themselves.

It is apparent from the study's results that there is no evidence that the insertion of relevant devices adds to the effectiveness of an informational film. Thus, where instruction is the principal aim and cost a consideration, attention gaining devices such as zooms, extreme magnification, stop motion and spotlighting have no effect on learning. One may also suppose from the penultimate paragraph that devices that call attention to themselves too blatantly may be remembered when the story has been forgotten. (12:21)

The Mercer study had a two fold purpose: (1) To evaluate the relationship between learning factual material from films and the use of optical effects (fades, wipes, dissolves) in such films, (2) To study "film literacy" and its relationship to learning from films. Specifically the following questions were investigated. (10:1)

1. Do producers of educational films tend to be consistent in their theory and use of optical effects?

2. Can a general audience recognize optical effects and cuts in a motion picture when asked to do so?

3. What do optical effects mean to a general audience?

4. Can a general audience, which has been given "training" in the use of optical effects, interpret more accurately the transitions "covered" by optical effects than can an audience which has not been trained?

5. What effect, if any, does the use of varying amounts of optical effects have on film-mediated factual learning?

6. What effect, if any, does an illustrated lecture on certain conventional cinematic techniques have on film-mediated factual learning?

7. Do people who are already familiar with cinematic techniques learn more from films than people who are not familiar with such techniques?

The first five questions relate to the general problem of the influence of optical effects on learning from films; the last two questions deal with the "film literacy" factor. (10:1)

1. Do Producers of Educational Films Tend to be Consistent in Their Theory and Use of Optical Effects?

An analysis was made of the use of optical effects (fade, dissolve, wipe) in 52 existing instructional films and a questionnaire sent to 160 American, British, and Canadian film producers. In the analysis the films were projected and each optical transition was evaluated by the investigator according to the nature of the transition and type of optical effect used. The questionnaire included sections on the purpose for which fade out-fade in, dissolve and wipe are used; a ranking of the three optical effects from greatest to least in transition value; the use of optical effects with titles and animation; and a section for

further comment. The returns showed that different producers use different optical effects for the same types of transitions. One well-known producer doesn't use fade out-fade ins,while another uses them regularly. Some producers never use wipes, others occasionally, others often. Twenty-seven of the 45 respondents felt the fade represented the greatest lapse of time between scenes followed by dissolve and wipe; eight reversed wipe and dissolve and four thought a dissolve represented a greater passage of time than fade or wipe.

In general, there is no detailed consistency in the use of optical effects. Most of the respondents believed, however, that optical effects have definite meaning for the audience. Several stated explicitly that optical effects are used "to indicate" transitions. (10:3)

2. Can a General Audience Recognize the Optical Effects and Cuts in a Film When Asked to Attempt to do so?

This question was asked to establish the recognition of optical effects as a perceptual practicality. Subjects were able, using a film analyzer, to recognize optical effects and cuts. Results also indicate that the subjects improved with practice. In addition, subjects tended to forget to respond as they became more involved in the film. (10:5)

3. What Do Optical Effects Mean to a General Audience?

The experimenter gave oral definitions of cut, fade out-fade in, dissolve and wipe and showed examples of each to the subjects. After they were shown a film in which they were to watch for the practices, they were asked to fill out a questionnaire concerning the purpose or meaning of the transitions.

The results showed extreme diversity of opinion. For each optical effect there were at least two stated purposes opposed to one another. In general, there is no general meaning assigned to each of the optical effects tested. (10:6)

4. Can a General Audience Which is Given Training in the Nature and Use of Optical Effects Interpret More Accurately the Transitions Covered by Optical Effects?

A group of subjects here were given oral definitions of cut, fade out-fade in, dissolve and wipe, shown examples, and told these effects were sometimes used in connection with transitions in time, space and thought. A second group of subjects was not given this information.

Response key choices for the experimental groups included:

1. for a short lapse of time (a few minutes).
2. for a long lapse of time (several hours or more).
3. for a change in the general location of the action.
4. for both a lapse of time and a change of location.

Results showed no significant difference between groups, i.e., an acquaintance with the nature and use of optical effects did not help the "trained" audience to interpret the transitions any more accurately than the "untrained" audience. Later informal questioning indicated the subjects interpreted the meaning of optical effects in the film context in which they were seen. (10:7)

The Influence of Opticals and Film Literacy on Learning from Films

Three versions of one film were produced. Version A contained cuts between all scenes, B retained only the opticals between the main

sequences, and C retained all the optical effects present in the original. One experimental group received an illustrated lecture on the long shot, the medium shot, close-up, orientation, cut-in, cut-away, re-establishing shots, jump cuts, overlapping, matched action, cutting on action, camera angles, screen direction, animation, fade, dissolve, wipe and cut. The other did not. A film literacy test was given to both groups. (10:8)

Results were as follows: Optical effects did not aid factual learning, the lecture on cinematic techniques taught, and lastly, the lecture on cinematic techniques, by itself, does not conclusively add to or detract from learning from film, however, there is some evidence to suggest that there is a positive relationship between "film literacy" (familiarity with film techniques) and factual learning from a film. (10:15)

Mercer recommends that film producers should make full use of cues other than optical effects if transitions are to be well understood. He believes that optical effects are neutral in their effect on learning but possibly lend visual smoothness to the film. (10:16)

CHAPTER III

PROBLEM, METHODOLOGY AND HYPOTHESES

Problem Statement

This study was concerned with determining how children at the ages of 5, 7, 9 and 11 perceive and interpret selected filmic transitions. The filmic transitions selected for this study consisted of clean exit, lap dissolve, and image magnification on a cut. These elements connote changes in the film of time or place, or both, and are accomplished either through camera movement, subject movement or through optical manipulation during film processing. The objective of the study was to question and analyze the responses of the subjects in the various age groups to determine whether each of the transitional elements was correctly perceived from, and in the context of the film being viewed and secondly whether a hierarchical pattern of frequency of recognition was apparent or not.

The approach utilized was to allow each subject to view individually three examples of each of the specified transitions edited from theatrical and educational films. Experimentation across several examples assisted the experimenter in reducing the element of guessing and in helping to insure the transition was understood in a variety of contextual settings. During each showing, each subject had the action in the film segment, then being shown to him, read to him from a printed description to avoid contaminating the results by unintended emphasis inconsistent across all subjects. Immediately after he had viewed each transition the film was stopped during the question period. An open ended question was asked of him to

elicit a free response to determine if the subject had correctly understood the transition. He verbally described, in effect, what he had seen. His response was tape recorded. The responses of all subjects were transcribed and the entire text presented to three judges selected on the basis of their experience as film makers. These judges were advanced graduate students in the Division of Instructional Systems Technology, School of Education, Indiana University.

Implications. No study to my knowledge, other than this one, has concerned itself with how children perceive transitional elements. In fact, there were few studies, outside of those commissioned by the Children's Television Workshop, that had much to say about how children perceive anything they see on television or on film except in relation to box office receipts and the purchase of advertised breakfast food, toys, candy, etc. To quote from a letter from Dr. Edward L. Palmer, Vice-President and Director of Research, Children's Television Workshop:

> "One of our self-defined functions is, indeed, to help spark interest in basic research projects, the results of which would have more-or-less direct implications for our production activities. Among the projects now under way, with no more than moral support from us are studies of the effect of the ethnic integration of the cast; eye-movement research related to our efforts to motivate reading of print on the screen; studies of the effects of "Sesame Street" viewing on the deaf, the retarded, the perceptually handicapped, the remote Labrador village child, and children from non-English speaking backgrounds; a study of initation of social interaction models portrayed via television; a series of studies on the use of film and television special effects as models for imagistic thinking; and studies of individual differences in the

televis
all of
know of

ion-viewing preferences of children. I recommend these areas for further study, since the work we only scratches the surface."

Thus, how childre perceive these film conventions seems to have direct implications for f film and television producers concerned with that age audience, i.e., i children do not understand an optical transition, such as a dissolve, the there is little value in going to the expense of its utilization i a film. Conversely, if the camera transition tested (image magn ification) and the subject transition tested (clean exit) are correctly perceived the implications are more serious since the latter are much more an intrinsic element in the art of motion pic ure photography than is the former. Lack of understanding of the latter tra sitions would have to be overcome by instruction in their meaning if childr n are not to remain at a puerile level of understanding of the medium.

The follow ng figure indicates the characteristics and common intended meaning of the three transitions tested.

Transitional Element	Subject Transition	Camera Transition	Optical Transition	Change of Location	Change of Time
Lap Dissolve			X	X (probable)	X
Clean Exit	X			X (probable)	X
Image Magnification (cut)		X		X	

Figure 1. Transitional Filmic Conventions Tested

Methodology

Operational definitions for this study:

Lap Dissolve is an optical device effected by blending the gradually darkening last frames of the first shot with the gradually lightening opening frames of the succeeding shot. Visually the effect is of one scene fusing into another so that there is a brief period of superimposition before the second scene became predominant. The intent is to show passage of time and is proportional to the time passage intended. Place change is also often intended and either or both of these interpretations was acceptable for this study. Lap dissolves are often used between titles and between titles and action--neither of these applications was considered here. (8:4)

Clean Exit, in general, indicates a stationary camera held on a subject in motion until he or it leaves the field of view of the camera. In order that this element may be defined as a transition it must serve as a cinematic device indicating change of time or place or both. It was so defined for this study and examples of a clean exit that did not connote such transition were not used. (7:20).

Image Magnification, in general, means the increase in the relative size of the pictured subject through the action of a zoom lens, a change of lenses, or through decrease of the relative camera to subject distance. For this study, image magnification was restricted to instances where zooming was not utilized, and the image shown became larger as the camera to subject distance was decreased instantly on a cut from medium shot to close up or long shot to medium shot. The same effect, of course, occurs

when close up lenses are racked into place. In such a situation the decrease in camera-subject distance is only apparent. Though there is at present no sharply delineated definition of long shot, medium shot or close up, for the purpose of this study, they were generally defined as follows:

Long shot: that shot which shows the subject or subjects in full length and reveals all the significant elements to which the audience is expected to attend. The long shot sets the scene. (Bi:100)

Medium shot: usually presents the figure from the knees up and one in which some of the centering action is not lost to the surrounding locale, as in the long shot. (Bi:101)

Close up shot: usually presents the figure full face or points up other significant detail to heighten the dramatic impact. (Bi:103)

Procedure

Population. Selection of 60 subjects, i.e., fifteen subjects from each of the four age groups were selected from among the children of Indiana University students resident in University housing including Hoosier Courts, Campus View and Tulip Tree House. It was assumed that homogeneity of the population would help reduce extraneous factors such as those which are represented in Seibert's study (1:56) which reveal that socio-economic status is a determining factor in depth cue perception. Since this was essentially a pilot study in this area, and since some of the communicants were very young, it was thought that a wide range of socio-economic levels in subjects might have resulted in a threat to external validity.

Screening of subjects. No arbitrary cut-off dates were utilized in the selection of children for the four age groups. The age group into which the selected child was grouped was that of his age as of the date of the experiment. Any apparent gross visual or verbal abnormalities were grounds for rejection as a subject. The inability to respond verbally to spoken questions concerning the subjects' name and age, as well as other relevant data, was also considered grounds for rejection as a suitable experimental subject. One of the prospective subjects were rejected on the basis of the above. Since the subject viewed a relatively large projected image from only a few feet away, visual acuity did not seem to be a problem. The ability to distinguish figure from ground in the projected image was also sine qua non for consideration as a subject, but no such incapacity was detected in the subjects, nor was such a condition anticipated in a society heavily exposed to television and film.

Instrumentation. Instrumentation was through utilization of a 16mm projector of the open reel to reel type. Projection was made on a screen so that the image was not less than one foot across its shortest dimension and was viewed from a distance of not greater than three feet. In each case the subject was asked if he could see the projected picture clearly. All responded in the affirmative.

Three examples of each of the three conventions were edited from a variety of theatrical and educational films so that subjects might view the transitional conventions in various contexts. A written description

of the action shown in each film clip, which was read to each subject, served as a substitute for the sound track where such existed (Appendix A).

The writer believes that demonstrating these transitional conventions in a specially made film free of contextual clues would be artificial and contrary to the theme of this study and unlike any film or videotape presentation that the subject might ever see. There is no doubt that contextual clues play a significant part in correctly identifying the meaning intrinsic and intended in filmic transitional conventions and the theme of this study was to determine whether transitions are perceived in that context and nothing more.

Stimulus Materials. The materials used consisted of nine film segments of 16 to 35 seconds in duration, each separated by six feet of opaque leader. There were three examples of each of the three transitions which were edited from a short subject Metro-Goldwyn-Mayer film, "The Lady or the Tiger?," and from segments of #211 and #214 weekly editions of "Industry on Parade," Radio and Television Department, National Association of Manufacturers, 2 East 48th Street, New York, New York. In addition, an out-take from an Indiana University graphics training film, and an out-take from an Indiana University film on "Military Drill" were used. One of the segments was in color and the remainder in black and white. Color or the lack of it was not a significant factor since the subjects and action pictured were familiar to any American child and differentiation of figure and ground was not in the least difficult. The transitions consisted of three examples of

image increase on a cut, three examples of clean exit, and lastly, three examples of lap dissolve, spliced together in a random order.

As previously noted, the sound track, where such existed, was not used and a written description of the action was read as it occurred.

Treatment. After subject screening, each child was seated before the viewing screen. Each clip was shown and the description of the action read. After each element under study had been viewed the film was stopped. The subject was then asked what he perceived as having happened concerning the transition. His open-ended response was tape recorded. The recording was transcribed for ease of evaluation by the judging panel. Treatment was the same for each subject.

Scoring. Scoring was done by each judge by evaluating the transcript of each subject's response and determining as correctly or incorrectly perceived each of the three stimulus conditions across each of the three example film clips (nine examples per subject). Correct perception of each of the nine transitional convention examples was marked on the individual subject's scorecard printed opposite the transcript of his responses. An example of this scoring matrix is shown.

Stimulus element

Example	T1	T2	T3
E1			
E2			
E3			

Figure 2. Individual Scorecard

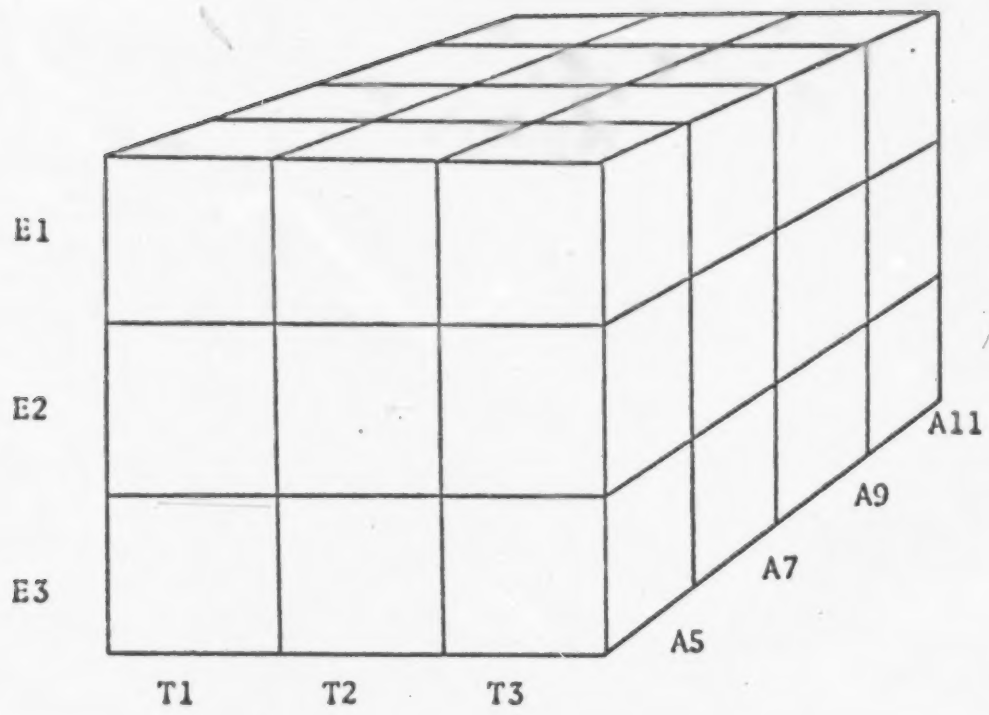
Experimental Design

This experimental design included three stimulus elements in three contextual situations across four age groups.

Stimulus elements (filmic transitional conventions) consisted of: lap-dissolve (T1), clean exit (T2), and image magnification (T3).

Treatments were: film clip 1 (E1), film clip 2 (E2), and film clip 3 (E3). Age was of four levels: 5 year old (A5), 7 year olds (A7), 9 year olds (A9), and 11 year olds (A11).

Treatment and stimulus elements were independent variables, age was a control variable and the dependent variable was the total number of judged correct responses by each subject for each stimulus element in each treatment.



Example	Transition	Age
Film clip 1 (E1)	Lap-dissolve (T1)	5 year olds (A5)
Film clip 2 (E2)	Clean exit (T2)	7 year olds (A7)
Film clip 3 (E3)	Image Magnification (T3)	9 year olds (A9)
		11 year olds (A11)

Figure 3. Experimental Design

Hypotheses

1. As children, between the ages of 5 and 11, get older, they recognize with increasing accuracy the intended meaning of certain conventional visual filmic transitions (image magnification, clean exit, lap dissolve).
2. As children, between the ages of 5 and 11 get older, they perceive the intended meaning of certain conventional visual filmic transitions (image size magnification, clean exit, lap dissolve) in a hierarchical pattern of frequency. That is, one of the three transitions tested is perceived more frequently than a second, which is perceived more frequently than a third.

Null Hypotheses

1. There is no significant difference in the recognition by children between the ages of 5 and 11, of the intended meaning of certain conventional visual filmic transitions (image magnification, clean exit, lap dissolve).
2. As children, between the ages of 5 and 11 get older, they do not perceive the intended meaning of certain conventional visual filmic transitions (image size magnification, clean exit, lap dissolve) in a hierarchical pattern of frequency. That is, one of the three transitions tested is not perceived more frequently than the others.

CHAPTER IV

RESULTS AND DISCUSSION

Results

Analysis of the data required the scoring of each subject's transcribed response, by each judge, as to whether or not the subject perceived the transitional elements shown to him. The totaled responses, by judge may be seen beginning with Table 4; ordered responses grouped by age, judge and by type of transition may be seen beginning with Table 13.

The ordered and totaled data were entered on computer data cards, and a repeated measures analysis of variance derived through the BMD08V Program (Health Sciences Computing Facility, U.C.L.A.)

Index	Judge	Age	Subject	Type of Transition
Number of Levels	3	4	15	3

The computer print-out provided the following information:

Source	Sum of Squares	Degrees of Freedom	Mean Square
Judges	.2111	2	.1056
Age	146.2000	3	48.7333
Type	52.0778	2	26.0389
Subject (Age)	125.9556	56	2.2492
Judge x Age	.9889	6	.9648
Judge x Type	.1778	4	.0444
Age x Type	59.7889	6	9.9648
Judge x Subject (Age)	13.9111	112	.1242
Subject x Type (Age)	113.2444	112	1.0111
Judge x Age x Type	1.9556	12	.1630
Judge x Subject x Type	37.4222	224	.1671

Table 1. ANALYSIS OF VARIANCE DATA

F values were calculated to determine the significance of variability due to judges, age, type of transition and interaction between judges and type of transition.

Results were as follows:

$$\frac{\text{Mean square of variable (J)}}{\text{Mean square of error term JxS (A)}} = \frac{.1056}{.1242}$$

= .85, therefore variability among judges were insignificant.

$$\frac{\text{Mean square of variable (A)}}{\text{Mean square of error term S (A)}} = \frac{48.7333}{2.2492}$$

= 21.67, therefore variability among ages was significant at the .001 level.

$$\frac{\text{Mean square of variable (T)}}{\text{Mean square of error term JxSxT (A)}} = \frac{26.0389}{.1671}$$

= 155.83, therefore variability among types of transitions was significant at the .001 level.

$$\frac{\text{Mean square of the interaction between variables JxT}}{\text{Mean square of error term JxSxT (A)}} = \frac{.0444}{.1671}$$

= .27, therefore variability due to the interaction between judges and types of transitions was insignificant.

Thus, variability in scores is due to age and type of transitions, each having been demonstrated to be significant at the .001 level.

Cell totals are as follows:

Judge	1 (Simmons)	2 (Terman)	3 (Turner)	
	417	425	424	
Age	1 (5)	2 (7)	3 (9)	4 (11)
	229	268	369	400
Type	1 (Image Mag.)	2 (Time Dissolve)	3 (Clean Exit)	
	380	385	501	

TABLE 2. CELL TOTALS

Cell means (maximum score of three) are as follows:

Judge	1 (Simmons)	2 (Terman)	3 (Turner)	
	2.3167	2.3611	2.3556	
Age	1 (5)	2 (7)	3 (9)	4 (11)
	1.6963	1.9852	2.7333	2.9630
Type	1 (image mag.)	2 (Time Dissolve)	3 (Clean Exit)	
	2.1111	2.1389	2.7833	

TABLE 3. CELL MEANS

The age cell means support the intial hypothesis that, as children get older, they recognize with increasing accuracy the intended meaning of certain conventional filmic transitions (image magnification, lap dissolve and clean exit).

The type of transition cell means support the second hypothesis that there is hierarchical pattern in the frequency of recognition in children, between 5 and 11, of the intended meaning of certain conventional visual filmic transitions (image magnification, clean exit, lap dissolve). The sequence of transitions of the three utilized were clean exit, most frequently perceived; time dissolve, next most frequently perceived; and image magnification on a cut, least frequently perceived. Notice however, that of the last two transitions, score totals are quite close, i.e., 385, 380. Thus, it would be improper to base any production decisions on the scores of these last two transitions.

Discussion

This study was designed to investigate children's perceptions of selected filmic conventions. Previous related studies by Neu (Penn. State: 1950), "The Effect of Attention Gaining Devices on Film -- Mediated Learning," and by Mercer (Penn. State: 1952) "The Relationship of Optical Effect and Film Literacy to Learning from Instructional Films," dealt with learning, as is apparent in the titles. In addition, subjects utilized in both studies were drawn from military populations of young male adults. There has been, based on an extensive search of the literature, no study related to how children perceive filmic transitions. This study has been concerned with just such perception.

Hypothesis 1 stated "As children, between the ages of 5 and 11, get older, they recognize with increasing accuracy the intended meaning of certain conventional visual filmic transitions (image magnification, clean exit, lap dissolve)."

Hypothesis 2 stated "As children, between the ages of 5 and 11 get older, they perceive the intended meaning of certain conventional visual filmic transitions (image size magnification, clean exit, lap dissolve) in a hierarchical pattern of frequency. That is, one of the three transitions tested is perceived more frequently than a second, which is perceived more frequently than a third."

Hypotheses 1 and 2 were both supported at the .001 level of significance, though Hypothesis 2 is accepted with previously noted reservations. Thus, there is an age based progression in the perception of the three transitions selected. There is a pronounced difference in the frequency of recognition between clean exit and the other two transitions. Differences between image magnification and time dissolve are slight.

The following is an edited transcript of the judges evaluation of the subjects responses. The evaluations are a Gestalt, if you will, which may provide some additional insight into how the results of this study may be utilized by producers of films for children.

Judge 1 (Gary Simmons)

> The most obvious distinction I saw was that the five and seven year olds fall into a group, and the nine and 11 year olds fall into a group. The nine and 11 year olds are basically very sophisticated because the 11 year olds consistently knew every technique or they came awfully close to it. They also were able to talk about film technique. They consistently talked about camera movement, and about cutting film. It wasn't in a sophisticated way but it demonstrated an obvious awareness of film technique. The five and seven year olds, I think, for their age, were amazingly aware, but the things that amazed me about the five year olds was that they would recognize a technique such as getting closer in order tomake something look bigger in one instance, and then turn right around and be oblivious to it in another. I think the main idea is that context must be kind of important to them in recognizing the particular effect.

I was amazed most at the fact that the 5 year olds couldn't begin to articulate what was happening and yet they pretty consistently recognized, by their answers anyway, the fact that some action had taken place outside of the film.[2] For instance, the plane had to take off before you could see the ground from the plane. With any of the time lapse things; any of the dissolves; they recognized almost universally that some kind of action had taken place.

They would say, well maybe it took him two minutes to get there, or maybe he ran fast, but they didn't seem to be impressed by the possibility that magically the person had simply been incorporated in another place. It just didn't just happen like that. They recognized that he had to get there and they accounted for some kind of time.

I think because of that discrepancy in time, where they say two hours and they mean two minutes, I would give them the benefit of the doubt in that direction. I've got a feeling that

just because of the way the questions went, and the way the responses went, there were a number of times when I felt they just weren't able to articulate but that they understood, in at least some limited fashion. We might be underestimating in that sense. That may not be true with say, size changes. Now there they just obviously didn't understand. There they said the subject growed, or somebody was under the ground pushing him up, but even there what does he (the subject) mean by pushing him up? Again there were times when the word up or that type of thing meant ultimately to become closer.

One kid said we were looking down, and he never quite said we were far removed, but I got the impression that it was a kind of a stadium experience. That he had been above something and it looked smaller.

I tended to try to get a Gestalt feeling from the kid's response. I tried as best I could when he wasn't articulating specifically the words, to get feeling for whether he understood, even though there were times when he contradicted himself within the same statement. But that contradiction sometimes leaned to a very specific direction. In other words, what I tried to avoid was a kind of no decision answer. I tried to go one way, or the other, and I did in fact in every case which might not have always been valid, but I think it was in a lot of cases.

Concerning clean exit clips, I don't think I remember more than one response, out of the whole thing, where a kid even hinted at the fact that he believed that the object had disappeared. Everybody, including the five year olds, if you asked where the object went, might say Kansas City, but very definitely implied that the thing was still around.

Another interesting thing is that the children, including the 5 year olds, in the sequence where the plane is shown taxiing, followed by a shot of the ground from the air, accepted the situation without surprise. They just very calmly assumed that they were up in the air, and they were looking at the ground. Flight, and that kind of point of view is so universal now to our culture that little kids who perhaps have never flown just say, "Well now we're in the air." I think that is pretty fantastic since there was no visual link at all between the take off, and the shot from the air. There were no other cues to associate the ground with the plane in that shot. There were no other planes on the ground and there weren't any runways. There wasn't anything but mountains and clouds, which in a figure-ground sense is pretty interesting too, because that's just a pattern. These kids were able to associate immediately aerial view, and not just any aerial view, but aerial view from that airplane that I just saw taxiing. This seems to be a pretty sophisticated processing of the visual.

Some of them went so far as to talk about the fact that maybe the take off wasn't seen because it was obscured by clouds. They made association by that route. Another interesting fact was that you have camera placement, and they assumed that the field of vision was limited by the camera, thus, the object would move out of frame, and do whatever it was going to do, and then be picked up later. Again this is a pretty complex visual. One kid kept talking about the line which he identified finally as the edge of the frame. He was so aware of visual context -- by the time he watches television and movies and whatever other kind of visual thing he sees beyond that -- slides for instance, in the home -- he is very used to a rectangular kind of format, or least a linear format with a linear perimeter. Things move in and out of that frame and he doesn't have to see them anymore. There's no wonder on his part. I think that one of the things that amazes me is that kids just don't seem to be amazed.

One girl said "Who wants to see them walking down the stairs?" "That's not interesting." That's already a film editing concept in the sense of pacing. That's already being aware of audience needs in terms of film interest, and that's pretty wild. Another thing I was amazed at, was that few of them were really distracted by the subject matter. You'd think that right away they would get off into the subject matter rather than technique. But they were very aware basically, of the fact that you were asking some kind of question about what was happening visually. Every once in a while they got hung up on the fact that it was the princess, or that it was the father, or the boy friend was kissing her, and he shouldn't have been, or something like that, but by and large they were very aware of the technique.

The thing that interested me was that visual problems -- and this may be reading too much into it -- are not out of their range of interest and capabilities. You knew they could speculate somewhat about what was happening to the action presentation, rather than getting all balled up in whether the king had shoes on, or not. For a five year old I think that is doing pretty well.

The clip about the lettering confused some of the young ones as much as anything. I think there were more answers that said, yes, he just did it fast, than any other place I noticed.

The problem seemed to be that it was a matched dissolve, and the others weren't, and this is probably harder to perceive.

I felt that the episode with the stunt cars was the most confusing.

Only one person suggested the car just disappeared in smoke. All the others assumed that it either went into the pits, or it went to a ramp, or it went to the finish line, or it went to the parking lot, and so on.

The size problem for these kids seemed the greatest with the statuettes.

They didn't seem to have any trouble basically with the drum major, in image magnification, except for one boy. If the entire person or thing was shown, he didn't have any difficulty with it, but when the frame showed only part of the body, which it did in that drum major cut, he wasn't able to perceive it. At first he began to say they (the cameramen) physically cut off parts of the drum jajor's body, but then he realized that that wasn't too rational, and modified that to suggest a portion of his body was out of the frame.

Judge 2 (Phil Terman)

On the whole I felt the transcript provided a fairly good evaluation of the children's understanding of the transitions. The task that the children were asked to perform seemed to be readily understood by them and most of them seemed capable in responding in some fashion or other. On several occasions when the subject was a little reticent in his answering or a little slow the interviewer tended to do a little coaching and permitted the subject to answer with yes or no. In such a situation it was more difficult to judge if the subject had a correct understanding of a particular transitional device. But, I only make this as a minor criticism becuase, on the whole, over the sixty subjects there seemed to be a fairly large degree of agreement. For example, subjects of the oldest age group seemed to be most consistent in their recognition of these transitional devices and this broke down with younger groups. There were some notable exceptions. Some of the subjects who were seven and even five years old were able to produce some rather startling observations concerning the making of films. There were even the occasional statements referring to changing focal lengths and film editing techniques. These types of responses were more than were requested by the interviewer and probably will get buried in the data, but I think they were very interesting observations. Occasionally, as I noted earlier, the subject may have responded initially in a way I thought consistent with his other responses, but, perhaps due to a degree of uneasiness about the experimental situation, he tended to produce a contradictory answer. These kinds of psychological games which are played in this kind of interviewer/interviewee setting are more

likely to cause problems in younger age groups. In such a situation I usually based my determination on the initial response indicating recognition, or non-recognition of the transitional device, if it seemed the subject was merely responding as he supposed the interviewer wished him to respond. I think, on the whole, for this large a sample there is a large degree of intern consistency within groups which would, in turn, support the validity of the results.

Judge 3 (Lynn Turner)

One of the things that impressed me most, in reading the responses of the children, was the commonality of what you might call the mistakes of the 5 year olds in particular, and even of some of the 7 year olds. For instance, on image magnification, the children frequently would say that the image got larger because the slave stood up, or because the factory worker put the base of the statue on it and made it bigger. In other words, taller meant bigger to them. In other cases, subjects said that the person got older, or just grew. There seem to be virtually no difficulty in recognizing clean exit examples, even on the part of the five year olds. Some of the few failures to respond correctly on this were due to no response at all, and there might have been a possibility that they just didn't understand the question. I don't know. Again it was pretty much universal that everyone knew that the object still existed after it left the screen.

It was my impression that the five year olds, and again some of the 7 year olds, had a little more difficulty with the dissolves. The one that seem to give them the most trouble was the one demonstrating lettering, and it was not uncommon for them to say that the dissolve, from four letters complete to the entire word complete, was caused by the person writing extra fast. This seemed to give them quite a bit of trouble. Rarely did 11 year olds miss any of the questions. They seemed to pretty much express a clear understanding of what was going on all the way through. The nine year olds seemed to have this in common too. They seemed to be a little closer to the 11 year olds, and the 7 year olds seemed to be a little closer to the 5 year olds in their responses, however, there were a number of very sharp 7 year olds who performed every bit as well as the 9 year olds. I found it very difficult to judge some of the 5 year olds responses to the time lapse examples because it was evident that they really didn't have much of an understanding of real time.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to determine how children, between the ages of 5 and 11, perceive selected conventional filmic transitions. Secondly, to determine if there was an emergent recognition pattern among the three types evaluated: image magnification on a cut (a camera transition), lap dissolve (an optical transition), and clean/exit (a subject transition).

The research was conducted with fifteen subjects from each of four age groups (5, 7, 9 and 11). Selection of subjects was made from among the children of Indiana University students resident in University housing, including Hoosier Courts, Campus View, and Tulip Tree House. The age level into which the selected child was grouped was that of his age as of the date of the experiment.

Film clip examples were selected from a number of theatrical and educational films, and were of a type commonly encountered by children via film, or on television. The film clips were randomized in their sequence of placement in the experimental film, and were spaced with six feet of opaque leader between each clip. Three examples of each of the three filmic transitional conventions, as described above, were projected by 16mm projector on a screen in clear view of the subject. A written description of the action shown in each film clip was read to each subject as that action

unfolded (Appendix A). After each clip has been shown, the film was stopped, and the subject asked by the experimenter what he perceived as having happened relevant to that particular transition (Appendix A). The subject's response, further questions by the experimenter, and further responses on the part of the subject, were tape recorded and transcribed.

The transcript of the children's responses was evaluated by three advanced graduate students in the Division of Instructional Systems Technology of Indiana University. On the basis of the transcript, each judge determined whether the subject perceived, or failed to perceive the intended meaning in the transition presented. Each judge entered that determination on a matrix, as a score of 1 (perceived), or 0 (not perceived) (Figure 2).

Each judge's completed score sheet was then ordered by age, and type of transitional element, and sub-totals and totals entered (Figure 13).

Analyses of the data showed the following effects to be statistically significant:

1. Subjects perceived, with increasing accuracy, the intended meaning of the selected conventional filmic transitions.
2. There was an emergent recognition pattern in the perception of the intended meaning of the selected conventional filmic transitions, such that clean exit examples were, to a considerable degree, most frequently perceived, followed by lap dissolve, followed by image magnification on a cut. The last two transitions

were found to be perceived at almost the same frequency. Other evaluated sources of variability were determined to be statistically insignificant.

Conclusions

Based on the findings, the major conclusions were:

1. When children of the groups tested are presented film clips containing certain filmic transitions (image magnification on a cut, clean exit, and 'ap dissolve), they perceive these transitions, with increasing accuracy as they grow older.
2. When children, of the ages of the groups tested, are presented film clips containing certain filmic transitions (image magnification on a cut, clean exit, and lap dissolve), they perceive these transitions in such a manner that they most frequently correctly identify examples of clean exit, and, to a much lesser degree, correctly identify examples of lap dissolve, and examples of image magnification on a cut. The last two transitions are quite alike in the frequency with which they are perceived by the age groups tested.

Recommendations

Based on the conclusions, the following recommendations are made for further research in the child's perception of visual transitions:

1. Enquiry into the perceived meaning of other types of filmic transitions and devices among children. These filmic devices range, from simple slow motion or time lapse to the most obscure montages.
2. Enquiry into the perceived meaning of these, and other types of filmic transitions and devices, among other than an essentially homogenous American age sample. These might examine singly, or in comparison with other groups, different socio-economic levels and different racial or cultural groups, both in the U.S., and in foreign countries.

In sum, an examination should be extended throughout the warp and woof of film literacy, and indeed visual literacy, if, in a media dominated society, viewers are to be anything more than ingenuous and passive receptors, and if the brain is not to be so readily tricked by the eye.

BIBLIOGRAPHY

BIBLIOGRAPHY

1. Baikie, David Adamu, The Effects of Single and Combined Pictorial Cues on the Perception of Depth by Children Aged Five and Six Years From Two Socio-economic Groups, Unpublished doctor's thesis, Indiana University, 1969, 116 pp.

2. Birdwhistell, Ray L., Kinesics and Context, University of Pennsylvania Press, Philadelphia, 1970, 304 pp.

3. Carpenter, C. R., "Logistics of Sound Motion Pictures for Military Training," Human Engineering Report. SDC 269-7-31 State College Pennsylvania: Pennsylvania State College, Instructional Film Research Program, 1952, 37 pp.

4. Chu, Godwin C., and Schramm, Wilbur, Learning from Television: What the Research Says, (U.S. Office of Education, Contract 2EFC70894), Institute for Communication Research, Stanford University, 1967, 102 pp.

5. Eisenstein, Sergei, Film Form, Harcourt, Brace and Company, New York, 1949, 279 pp.

6. Forsdale, Joan R., and Forsdale, Louis, "Film Literacy," AV Communication Review, Volume 18, Number 3, 263-275, Fall, 1970.

7. Gaskill, Arthur L., and Englander, David A., How to Shoot a Movie Story, New York, Norgan and Morgan Company 1960, 135 pp.

8. Herman, Lewis, A Practical Manual of Screen Playwriting for Theatre and Television Films, The World Rublishing Company, Cleveland and New York, 1963, 287 pp.

9. Livingston, Donald, Film and the Director, The Macmillan Co., New York, 1953, 202 pp.

10. Mercer, John, "The Relationship of Optical Effect and Film Literacy to Learning from Instructional Films," Human Engineering Report SDC 269-7-34. State College Pennsylvania: Pennsylvania State College, Instructional Film Research Program, 1953, 19 pp.

11. Morton-Williams, P., Cinema in Rural Nigeria, West African Institute of Social and Economic Research, University College, Ibadan, Nigeria, 1953, 195 pp.

12. Neu, D. Morgan, "The Effect of Attention-Gaining Devices on Film-Mediated Learning," Human Engineering Report SDC 269-7-9. State College Pennsylvania: Pennsylvania State College, Instructional Film Research Program, 1950, 21 pp.

13. Phillips, John L., Jr., The Origins of Intellect: Piaget's Theory, W. H. Freeman and Company, San Francisco, 1969, 132 pp.

14. Pryluck, Calvin, "Structural Analysis of Motion Pictures as a Symbol System," AV Communication Review, Volume 16, Number 4, 372-402, Winter, 1968.

15. Research Principles and Practices in Visual Communication. Department of Audiovisual Instruction, National Education Association, Washington, D. C., 1960, 146 pp.

16. Salomon, Gavriel and Snow, Richard E., "The Specification of Film Attributes for Psychological and Educational Research Purposes," AV Communication Review, Volume 16, Number 3, 225-244, Fall, 1968.

17. Skornia, Harry J., Television and Society, McGraw-Hill Book Company, New York, 1964, 248 pp.

18. Spottiswoode, Raymond, Film and It's Techniques, University of California Press, Berkeley and Los Angeles, 1957, 516 pp.

19. Williams, Clarence M., and Debes, John L., Editors, Proceedings of the First National Conference on Visual Literacy, Pitman Publishing Corporation, New York, 1970, 295 pp.

20. Worth, Sol, "Cognitive Aspects of Sequence in Visual Communication," AV Communication Review, Volume 16, Number 2, 121-145, Summer, 1968.

MOTION PICTURES, FILMSTRIPS, AND RECORDINGS

Industry on Parade, No. 211 Radio and Television Department, National Association of Manufacturers, New York, 1957, 16mm, black and white, sound, 27 minutes.

Industry on Parade, No. 214, Radio and Television Department, National Association of Manufacturers, New York, 1957, 16mm, black and white, sound, 27 minutes.

The Lady or the Tiger? Metro-Goldwyn-Mayer Studios, Hollywood, California, 1942, 16mm, black and white, sound, 10 minutes.

Out takes from Lettering Instructional Materials, Audio-Visual Center, Indiana University, Bloomington, Indiana, 1954, 16mm, black and white, sound, 22 minutes.

Out takes from Military Drill, Audio-Visual Center, Indiana University, Bloomington, Indiana, 1954, 16mm, color, sound, 10 minutes.

APPENDIX

APPENDIX A

Description of Film Segments

Description of Film Segments

Information in quotations below is that read to each subject during the viewing of each film segment. Narrative segments are, of course, in the same random order as the film segments shown. Duration of each film clip, type of transition, and film clip description is shown above each narrative segment and the question asked of the subject is shown below each narrative segment.

1. (26 seconds) (Image size increase on a cut) Balfour factory; workman fastening bases to metal statuettes; cut to medium of close up statuette.

"Here is a workman in a factory. He's putting the bottom part on little statues. Now we can see the statue as he turns it around. It looks bigger."

"How did the statue get bigger?"

2. (22 seconds) (Clean exit) Motor home driving along a country road; cut to close up as it turns right across bridge, clean exits, next shown on long shot near factory, cut to close up of factory.

"Here's a camper truck driving along a road. Now its crossing a bridge. There it goes. And now we see it near a big factory on some other road and now we see the factory."

"When the camper truck crossed the little bridge we couldn't see it for a little while. Where did it go?"

3. (25 seconds) (Clean exit) Passenger plane clean exits the frame; next shot is from pilot window while in flight.

"Here's a big plane and its rolling along the ground. Now we're up in the airplane looking down at the clouds."

"When the plane was rolling on the ground we couldn't see it for a little while. Where did it go?"

4. (22 seconds) (Time lap dissolve) Old slave and woman embracing and smiling in an ancient forum or circus, crowd cheering, confetti falling on them, cut to emperor smiling on dias in the forum, dissolve to emperor in daughter's room, walks to daughter, kisses her on forehead.

"Here's an old man and there's a woman there and they're both in a big circus and the crowd is very happy and they're throwing down little pieces of paper. The king is very happy and he's laughing. Now he's in his own room and he's kissing his daughter on the head and he's going out the door."

"We saw the king at the circus and next we saw him at his house. How did that happen?"

5. (16 seconds) (Image size increase on a cut) Drum major leading band, drum major halts, close up of drum major, extreme close up of drum major, allows whistle to fall from his mouth.

"Here's a marching band and there's a man leading the band and he has a whistle in his mouth and now he's letting the whistle

fall out of his mouth." Now he looks bigger."

"How did the man get bigger?"

6. (29 seconds) (Time lap dissolve) Emperor opens door to daughter's room, cut to daughter and young man embracing, cut to reaction shot of emperor, motions guards in, cut to guards taking away young man, they exit frame, zoom in to close up of daughter in tears, lap dissolve to young man in prison.

"Here's the emperor opening a door and he sees his daughter kissing her boy friend and he tells his soldiers to take the boy friend away. They're taking him away and his girl friend is crying. Now we see him in prison."

"We saw the boy friend being taken away and then right after that we saw him in prison. How did that happen?"

7. (19 seconds) (Time lap dissolve) Close up of man's hands as he letters word "LETTERING" using a Varigraph lettering instrument, completes first three letters, then lap dissolve to completed word as hand and Varigraph are moved to the right of the frame.

"Here's a man printing some words with a special machine. He's printed L, E, T, and he's finishing another letter T. Now he's all finished with the lettering."

"When we first saw him working he had only half the word done then, all of a sudden, he was finished. How did that happen?"

8. (35 seconds) (Image size increase on a cut) Medium shot of Emperor on dias in forum, long shot of crowd in forum, cut to medium shot of prison cell door built into wall of the forum, slave released through cell door, cut to close up of slave, cut to reaction shot of emperor who beckons slave to come to him, cut to long shot of slave walking toward him, stops, bows, matching action close up of slave as he stands up.

"Here's a crowd of people in a big circus and they're watching something and there's the king being fanned by some slaves. Here comes a prisoner out of the jail cell, and he's looking around and now he's coming over near the king, and he's kneeling down. He's bowing to the king. Now he's standing up. He looks bigger."

"How did the man get bigger?"

9. (30 seconds) (Clean exit) Long shot of two stunt cars weaving through obstacles, cut to two race cars in similar action in opposite direction (left to right), cut to car racing up ramp (same screen direction) another drives between ramp sections, cut to right to left shot of car racing out of a simulated cannon, through billow of smoke, clean exits to left, cut to three passenger cars in succession exiting factory.

"Here are two cars racing along. Now there are two cars racing the other way. Now here's a car going up over a ramp and one's going underneath at the same time. Now here's a car being shot out of a

cannon and there it goes. And now here are some cars coming out of a factory."

"After the car got shot out of the cannon where did it go?"

APPENDIX B

Instructions to Judges

Instruction to Judges

Each of the three judges was shown the experimental film prior to evaluating the responses of the subjects. The film was reshown on request at any time during the evaluation period. They were asked to determine, to the best of their ability, whether the children, on the basis of their responses, recognized the filmic transitions shown.

For image magnification, they were asked to evaluate the responses to determine if the children made some statement that indicated they recognized image size could be increased by decreasing the relative camera-to-subject distance, i.e., either the camera was moved closer to the subject, or the subject was moved closer to the camera. Switching from a short to a longer lens would accomplish the same thing, but it was assumed few subjects would be of a level of sophistication to offer this equally correct response.

For clean exit, the responses should have indicated the children recognized the object or person clean exiting continued to exit, though he or it was no longer in view, and that the subsequent scene occurred at a later time, and/or, a different location.

For lap dissolve, the responses should have indicated the children recognized the time and/or place after the dissolve to be different than that before it.

Their evaluation of the responses for each clip was marked as yes (transition recognized), or no (transition not recognized), at the place

provided on the transcript.

The writer compiled the judges evaluations as may be seen beginning at Table 4.